REMARKS

Claims 1-26 and 30-35 are pending. Applicants respectfully request reconsideration and reexamination of the pending claims.

Applicants gratefully acknowledge the brief telephone interview granted by the Examiner on August 18, 2004 with Applicants' representative, Jonathan Hallman. The Applicants' representative was questioning why the incorporation of the material into page 2 in the response of January 4, 2004 was objected to as new matter. In particular, Applicants refer to the insertion of the following material:

> In accordance with known and prior art practice, each of the above-defined optical media can be further characterized as being second-surface media. In accordance with one definition, second-surface optical media can be defined in terms of the read operation that is conducted when reading information from the media. In particular, a second-surface optical medium can refer to a medium in which the read beam is incident on the substrate of the optical medium or disk before it is incident on the information layer.
>
> The relatively thick and transparent substrate of second-surface optical media makes read-only or read-write operations relatively insensitive to dust particles, scratches and the like which are located more than 50 wavelengths from the information layer. While the relatively thick substrate of second-surface optical media makes them relatively insensitive to dust or scratches, second-surface optical media can be relatively sensitive to various opto-mechanical variations. For example, common opto-mechanical variations include: (1) tilt of the substrate relative to the optical axis; (2) substrate thickness variations; and/or (3) substrate birefringence.
>
> These variations give rise to optical aberrations which degrade system performance arising from the presence of the relatively thick substrate and which can, at least theoretically, be partially compensated for by using a suitable optical path design. Such an optical path typically can only provide compensation for a single, pre-defined thickness of the substrate. Because there are likely to be variation in the thickness or other properties of the substrate, such compensation may be less than desired at some location of the medium.

This text was lifted verbatim from U.S. Ser. No. 09/652,975, an application that was incorporated by reference in its entirety on page 7, lines 10 through 12 of the specification. Specifically, the paragraph beginning on page 2, line 26 has been amended with three paragraphs taken verbatim from the '975 application beginning on page 3,

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lines 7 through 29 of the '975 application. This is entirely proper: for example, consider MPEP 2163.07(b), which states:

> Instead of repeating some information contained in another document, an application may attempt to incorporate the content of another document or part thereof by reference to the document in the text of the specification. The information incorporated is as much a part of the application as filed as if the text was repeated in the application, and should be treated as part of the text of the application as filed. Replacing the identified material incorporated by reference with the actual text *is not new matter*. (emphasis added)

In the August 18, 2004 interview, the Examiner indicated that the submission of a publication of the '975 application would help show the support. The '975 application was never published. However, in an effort to assist the Examiner, a submission of pages 1 through 4 of the '975 application as well as a copy of its filing receipt showing its serial number have been attached to this response.

Applicants have amended the paragraph incorporating the '975 application to reflect the fact that this application is now abandoned. However, as set forth in MPEP § 608.01(p), that has no effect: "abandoned applications less than 20 years old can be incorporated by reference to the same extent as copending applications; both types are open to the public upon the referencing application issuing as a patent." This abandonment happened after the filing of the present application.

To assist the Examiner's review of the '975 application, Applicants have highlighted the four paragraphs beginning on page 3, lines 7 through 29 of the '975 application with brackets. These four paragraphs were copied verbatim and added to the specification in the previous response. Because these paragraphs were already a part of the specification (having been part of an application incorporated by reference), it is not new matter to amend the present specification by bringing in the actual text as set forth in the previously-quoted MPEP section.

The additional material which was incorporated by reference and is now expressly added to the text helps further explain the operation of what is meant by prior art "second-surface" optical disks as opposed to the claimed inventive "first-side" optical disks. In particular, the additional material describes how the relatively thick substrate of

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a second-surface disk helps defocus dust particles that overlay this relatively thick substrate with respect to a laser beam that passes through the substrate to reach underlaying information layers. As shown, for example, by Applicants Figure 3, the claimed first-side optical disks have no such relatively thick substrate that acts to defocus dust particles. Instead, the information layers may be overlaid by a relatively thin optical coupling layer (for example, 80 nm in thickness, see page 8, line 2). Those of ordinary skill in the art will readily appreciate that this thickness, which is not even a single wavelength in thickness with respect to visible light, cannot possibly function to defocus any dust particles. In other words, dust particles laying on such an optical coupling layer would be read along with the data from the underlaying information layers. Applicants, however, are willing to abide with such degradation because of the beneficial advantages gained by not having a relatively thick substrate overlaying the information layers: namely, the lack of optical aberrations mentioned in page 2 of the specification.

Because there is no overlying defocusing layer on Applicants' metal/alloy information layer, the optical coupling layer overlying the metal/alloy information layer must function to optically couple the metal/alloy information layer to air (!), not additional polycarbonate covering. This is stated by the Applicants, for example, on page 7, lines 25 – 29:

> Not shown in Fig. 3 but shown in the detail 40 of Fig. 4, metal/alloy layer 31 is covered by a protective coating 38 which in this embodiment is formed of silicon oxynitride (SiO_xN_y). Coating 38, which could also be made of some other inorganic dielectric such as silicon dioxide (SiO_2), protects metal/alloy layer 31 and also optically couples metal/alloy layer 31 to the surrounding environment (air).

Accordingly, there is abundant written support for claim 1 to recite the limitation of "a first optical coupling layer overlying the second metal/alloy layer, the first optical coupling layer being adapted to optically couple the second metal/alloy layer to air." This limitation fundamentally distinguishes the optical disk of claim 1 from all the prior art of record because an optical coupling layer can have no defocusing effect: As well known in the arts, it is just a fraction of a wavelength in thickness (optical coupling layers may also be denoted as **anti-reflective layers** because the fractional wavelength thickness is chosen deliberately so that destructive interference occurs so as to suppress

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reflections). Because an anti-reflective layer enhances the coupling of optical energy into the medium it covers, it may also be denoted as an optical coupling layer.

The prior art stands in sharp constrast. For example, consider the Daimon reference (USP 6,346,309). Setting aside the fundamental distinction that Daimon is directed to a single layer, not a dual layer disc as claimed in claim 1, there is another even more fundamental distinction: Daimon discloses only a disc used in what is denoted as "evanescent wave recording." In evanescent wave recording systems, the optical head rides on the disk, thus requiring the need for a lubricant (layer 7 on the cover of the patent). As discussed in the background section of Daimon, a solid immersion lens (SIL) rides on the lubricant. As discussed with respect to Figure 2, between the single recording layer 4 is a stack formed by a dielectric layer 5 and protective layer 6. This stack cannot possibly function as the claimed "first optical coupling layer overlying the second metal/alloy layer, the first optical coupling layer being adapted to optically couple the second metal/alloy layer to air" because the stack in Daimon couples the recording layer to the solid immersion lens: if it coupled to air, the disk in Daimon would be inoperative. Thus there can be no motivation to modify the evanescent wave recording disk in Daimon to provide the inventive first side disk of claim 1. Accordingly, claim 1 is patentable over Daimon.

The Yasuda reference (USP 6,511,788) adds nothing further. As acknowledged by the Examiner, the protective layer in Example 5 of Yasuda is disclosed to be between 10 and 177 microns thick. Such a thickness does not qualify as the claimed optical coupling layer: an optical coupling layer can have no defocusing effect because it is just a fraction of a wavelength in thickness (optical coupling layers may also be denoted as anti-reflective layers because the fractional wavelength thickness is chosen deliberately so that destructive interference occurs so as to suppress reflections). Moreover, the intermediate product disclosed in Example 5 also has no relevance: the first enhancement film must be adapted to couple the underlying layers to acrylic, not air as recited in claim 1.

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The Takeda reference (USP 6,210,609) also adds nothing further: As discussed in Col. 5, the protective layer is at least 100 microns thick. This thickness is grossly thicker than an "optical coupling layer" which as set forth above is merely a fraction of a

wavelength in thickness as known in the art. Such a thickness has no defocusing effect but rather an anti-reflective effect. In contrast, the protective layer in Takeda would have a strong defocusing effect. It does not function as an optical coupling layer.

Finally, the Holster reference (USP 4,450,553] also adds nothing further. As seen in Figure 1 and discussed in Col. 9, line 52 through Col. 10, line 16, discloses an optical disk having a 1 mm thick substrate 1. On opposing surfaces of the substrate are formed reflection layers 5. As seen in Figure 1, the disk is configured such that the reflection layers are read by a laser beam that passes through the substrate. As such, it is similar to a "multiple substrate" approach in that dust particles on the surface of one reflection layer will be out-of-focus with respect to a laser beam passing through the substrate that is focused on the opposing reflection layer. This approach is quite different from the "one-side" configuration recited in claim 1 and teaches away from the "optical coupling layer" limitation recited therein.

In view of the above discussion, Applicant respectfully submits that claim 1 is patentable over these references used individually or in combination. Because claims 2 through 11, 18 through 26, and 30 through 34, and 58 depend either directly or indirectly on these references, they are patentable for at least the same reasons. In view of the Applicants' amendments to claim 1, the relevance of the other references cited by the Examiner (Wilting , Nishiuchi, Pan, Sugita, Allebest, Nakahara, Gotoh, and Mumford) is mooted because they provide nothing further to correct the deficiencies in the previously-discussed references.

Claim 12 has been amended in an analogous fashion to claim 1. No new matter has been added. Accordingly, it is patentable over the art of record for at least the same reasons as discussed with respect to Claim 1. Because claims 13 through 17 depend either directly or indirectly on claim 12, they are patentable for at least the same reasons.

Claim 35 has been amended in accordance with the amendments to claim 1. Accordingly, it is patentable over the art of record because they provide no suggestion to provide such an apparatus, let alone suggest a method of using such an apparatus.

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CONCLUSION

For the above reasons, pending Claims 1-26 and 30-35 are in condition for allowance and allowance of the application is hereby solicited. If the Examiner has any questions or concerns, a telephone call to the undersigned at (949) 752-7040 is welcomed and encouraged.

Certification of Facsimile Transmission

I hereby certify that this paper is being facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Jonathan Hallman — September 1, 2004 Date of Signature

Respectfully submitted,

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